**2.6 Related Rates Day 1**

**Find the required values of and .**

|  |  |  |
| --- | --- | --- |
| **Equation** | **Find** | **Given** |
| 1. | a.  *when x = 4*  *b. when x = 25* | = 3  = 2 |
| *2. y = 2(x2-3x)* | a.  *when x = 25*  *b. when x = 1* | = 2  = 5 |

3. John is blowing up spherical balloons at a rate of 4.5 cubic feet per minute. What is the rate of change in the radius at the instant when the radius is 2 feet?

4. 2 Convoys leave the point of origin the same time, convoy A going north and convoy B going east. At what rate is the distance between them changing after 3 hours? Convoy A is traveling at a rate of 6 mph and convoy B is traveling at a rate of 8 mph.

Hints:

What is the formula that relates distances of sides of right triangles?

In order to get side lengths for each convoy’s path, you will have to think about their speed and time travelled.